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(56) Documents Cited

GB 2183716 A

GB 2068719 A

WO1999/043237 A1

US 4191503 A

GB 2108834 A

EP 0003884 A1

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US 20020014751 A1

(58) Field of Search

UK CL (Edition V) A4L, E2A

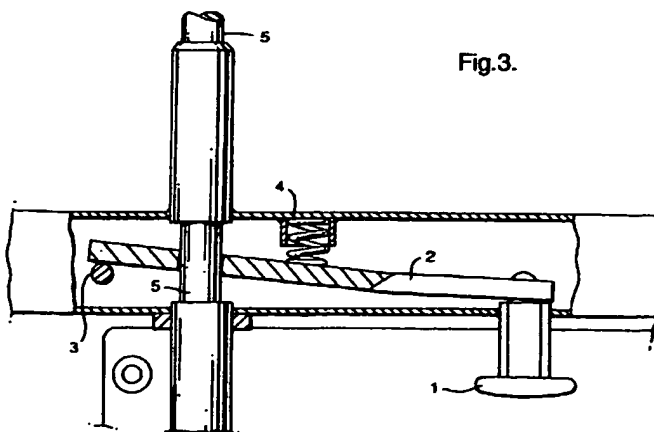
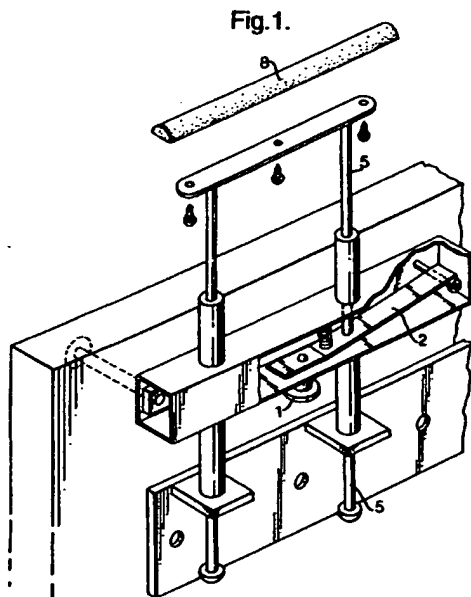
INT CL<sup>7</sup> A47C

Other: ONLINE : EPODOC, JAPIO, WPI

(54) Abstract Title

Vertically adjustable locking armrest

(57) An armrest (8) for a chair or similar is connected to the chair by shafts (5). The shafts (5) may travel vertically through an aperture on locking mechanism (2) and are adjustable to any height between higher and lower limits to suit the needs of the seated person. The armrest (8) may be fitted with a locking device (1, 2, 4) secured to the side of the chair. Deppression of the button (1) raises locking member (2), the locking member is released from shafts allowing them to move vertically. Releasing button (1) causes the spring to force the locking member against the shafts causing the shafts to jam in a locked state.



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Fig.1.

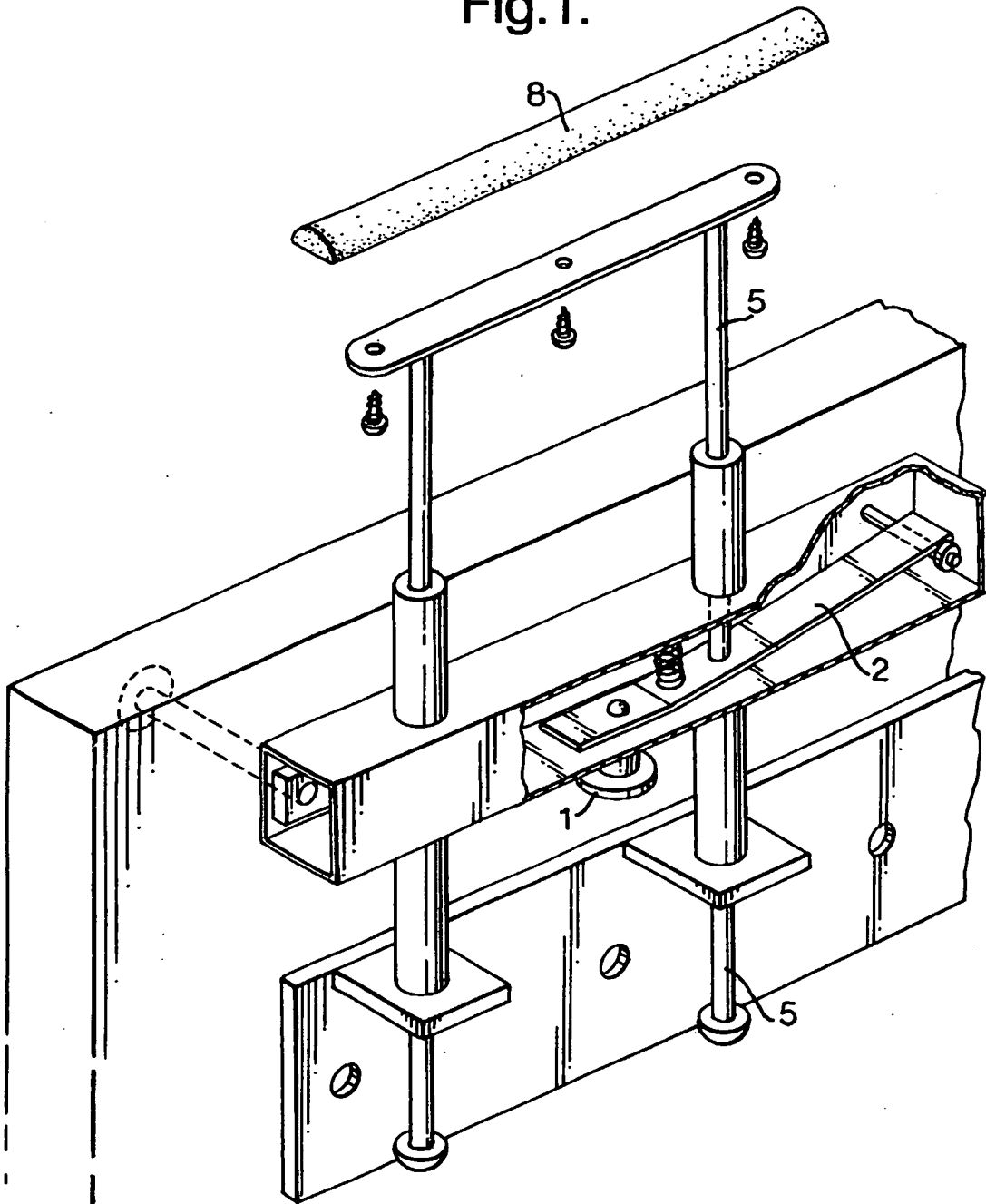


Fig.2.

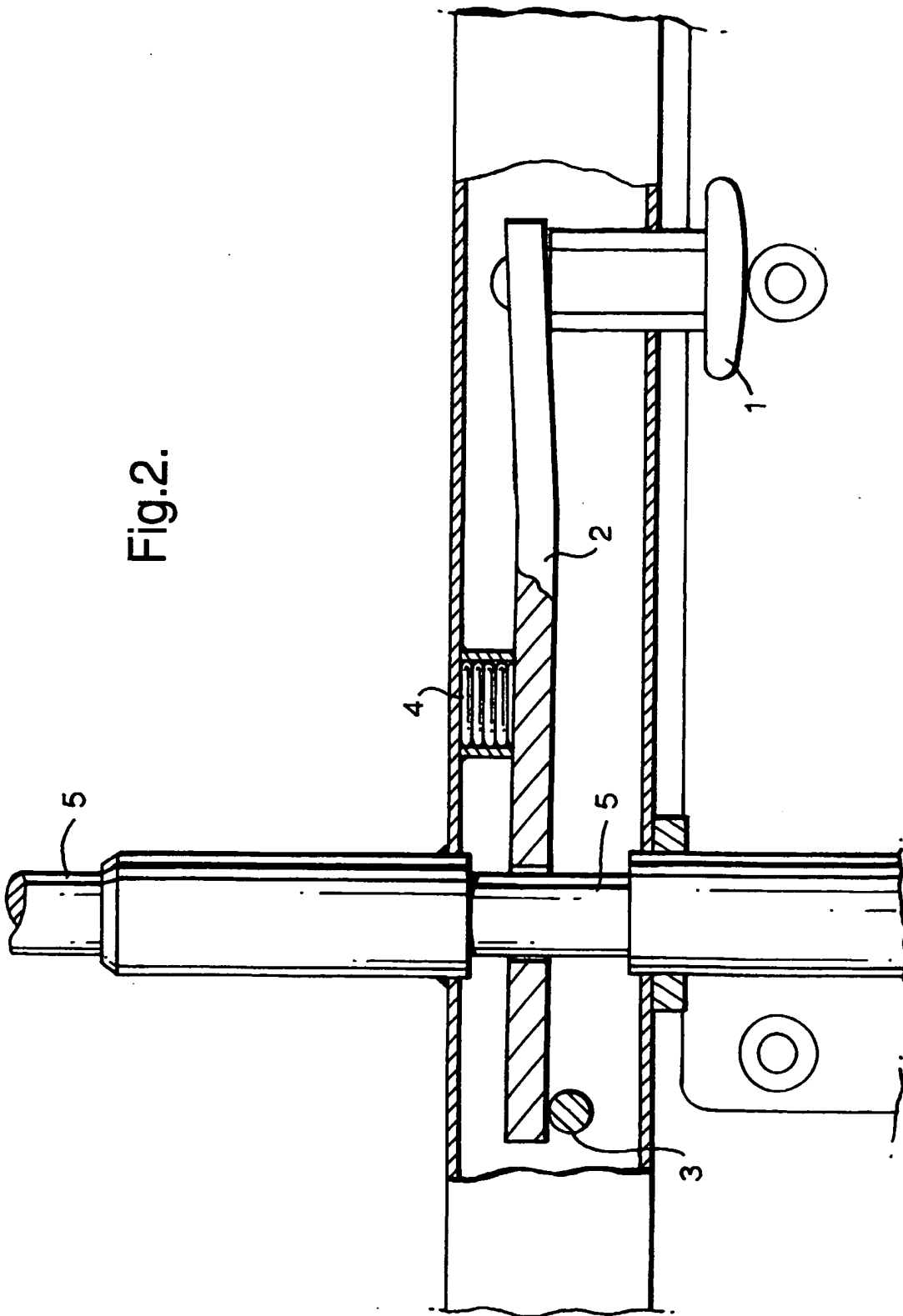
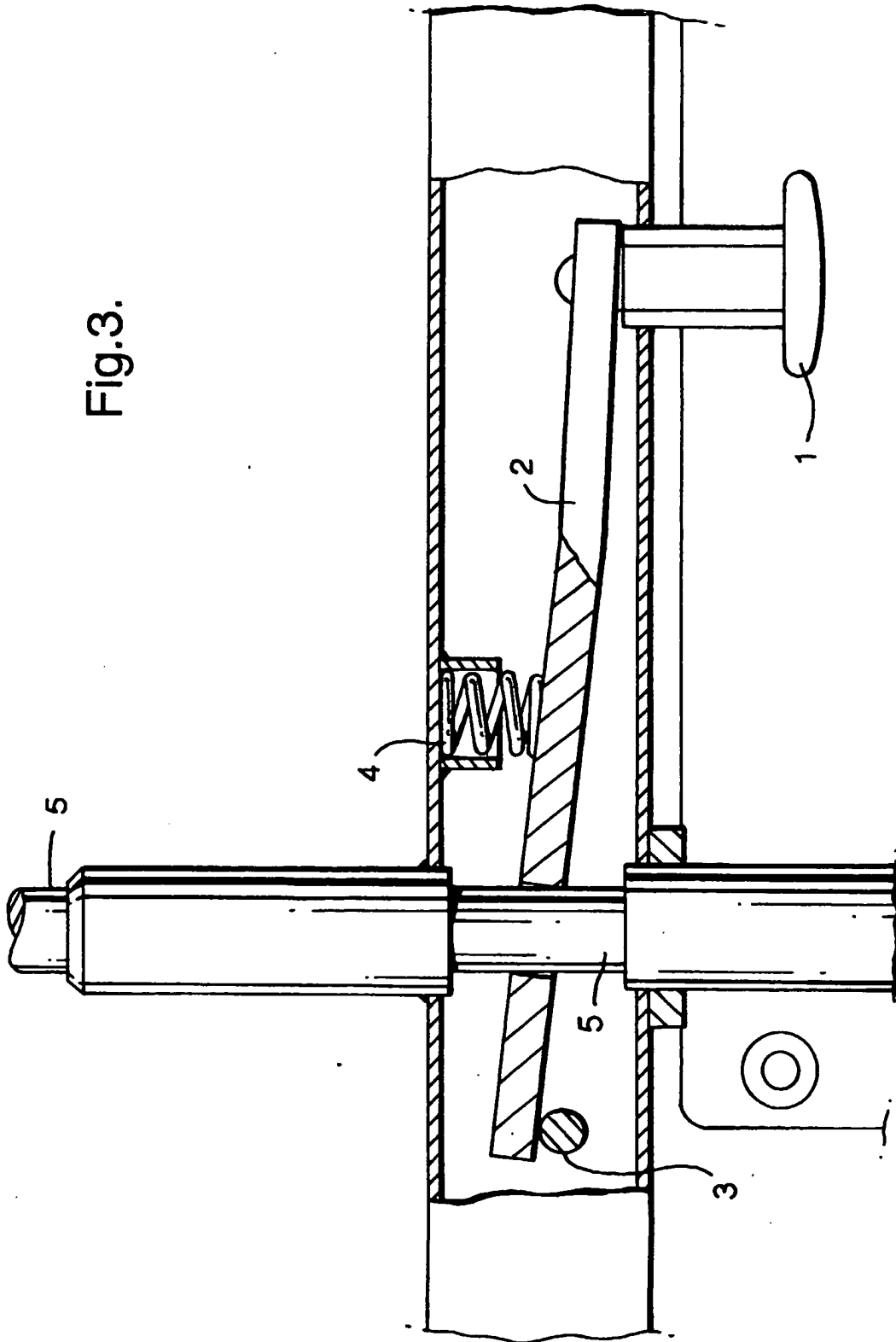


Fig.3.



ARMREST

The present invention relates to a chair with a variable height armrest.

5       The primary function of the variable height arm rest is to provide a disabled seated person, a high degree of security when at its highest height and the ability to side transfer onto a wheelchair, commode or similar device without obstruction when at its lowest height.

10       It is known to have chairs with adjustable height armrests with only two positions, up and down. These are secured in position by a catch holding the armrest in place. No other adjustment can be made. These armrests either travel vertically or are hinged via a pivot point  
15 in line with the seat back.

      The aim of the invention is to seek improvements. Accordingly, the present invention provides an armrest for a chair comprising an armrest supported by at least one shaft, the armrest position adjustable vertically to  
20 any height between a higher and a lower limit. Therefore, with the armrest adjustable to any height between top and bottom limits, the armrest suits the needs of a seated person in terms of comfort or as an aid to recovery, i.e. to support broken limbs, or the arms of young mothers  
25 caring for their babies.

      Preferably, the shaft(s) travels vertically within an aperture of a locking mechanism, the shaft being locked in place within the aperture to the desired position of the armrest. Preferably, the locking  
30 mechanism is secured to the side of the chair and more preferably, the armrest is always in the locked position.

      The invention will now be described in detail by way of example only with reference to the accompanying drawings, of which:

Figure 1 is a perspective view of the armrest according to the invention;

Figure 2 shows the locking mechanism of the armrest in Figure 1 in the unlocked position; and

5        Figure 3 shows the locking mechanism in Figure 2 in the locked position.

Referring to the Figures, an armrest 8 for a chair or similar is connected to the chair by shafts 5. The shafts 5 travel vertically through an aperture on locking lever 2, the armrest 8 always in the locked position. The armrest 8 can only be adjusted by taking hold of the armrest 8 with one hand and pushing up plunger 1 with the other hand. When plunger 1 is depressed the armrest 8 is free to travel vertically to the required height and will  
15        only be locked in place when plunger 1 is released.

The plunger 1 operates a friction lock between shaft 5 and two line contacts a and b of an aperture in a locking lever 2 that the shaft 5 passes through.

This friction force is maintained by a spring 4 and  
20        adjustment can only be made when this spring force is overcome by an upward force on plunger 1 via lever 2 pivoted about pivot point 3. When the plunger 1 is depressed, it positions the aperture in lever 2 perpendicular to the shaft 5 allowing the shaft 5 to run  
25        free. Therefore, the armrest is simple to operate by pushing lever 2 and positioning the armrest at the desired height, then releasing the lever 2 to lock the armrest in place.

The armrest 8 can be made from square steel section  
30        with two pairs of steel pillars on the top and bottom to support the two steel shafts 5 passing through the tube fixed to the side of the chair and the enclosed lever 2. The two steel pillars are joined at the top by a flat bar

through which the padded armrest 8 can be secured by two screws.

The armrest 8 can be secured to the chair by two fixing bolts which pass through the chair seat cross member and the square steel section. An additional bracket is fitted just below which determines the maximum armrest 8 height and also provides additional support to the arm rest 8. The minimum height is limited by the armrest 8 resting on top of the two steel pillars fixed to the top of the square steel section.

Although the invention has been described with respect to an adjustable armrest, the invention is equally applicable to adjust the height of a chair via the legs, the backrest and even the depth of the chair seat itself, with similar positioned mechanisms about the chair.

## CLAIMS

1. An armrest for a chair comprising an armrest supported by at least one shaft, the armrest position  
5 adjustable vertically to any height between a higher and a lower limit.
2. An armrest as claimed in claim 1 wherein the shaft(s) travels vertically within an aperture of a  
10 locking mechanism, the shaft being locked in place within the aperture to the desired position of the armrest.
3. An armrest as claimed in claim 2 wherein the locking mechanism is secured to the side of the chair.
- 15 4. An armrest as claimed in claims 1 or 2 wherein the armrest is biased towards the locked position.
5. An armrest substantially as herein claimed and with  
20 reference to the accompanying drawings.





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Application No: GB 0309269.9  
Claims searched: 1 - 5

Examiner: Gareth Jones  
Date of search: 29 July 2003

## Patents Act 1977 : Search Report under Section 17

### Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X, Y	1 - 4 X 5 Y	US 2002/0014751 A1 (HANSON et al) See para's 0013, 0022, 0030, 0042, 0062 - 0064, 0141 - 0146, 0235 - 0240; see also Fig 25, items 434, 814, 816, 818, 820 and 832.
X	1 - 3	GB 2068719 A, (NORDFOR) See whole document esp figure 1 items 27 and 28.
X	1 - 3	WO 99/43237 A1, (MERCADO MEDIC AB) See whole document esp Figures 1 and 2
X	1 - 3	FR 2505158 (JOUK) See whole document esp figure 1, items 13 and 14. See WPI abstract. Accession number 1982-B3159J[37]
Y	5	EP 0003864 A1 (FLORACO B.V.) See whole document esp page 6 line 3 to page 7 line 8. See also figure 1 items 9 - 12 inc and 15.
Y	5	GB 2108834 A (ELLISON HOSPITAL EQUIPMENT) See page 1 lines 93 - 121 inc, Page 2 lines 38 - 101 inc. See also figs 3 and 5.
Y	5	GB 2183716 A (GALVIN) See page 3 lines 13 - 42 inc. See also figs 1 - 4 items 40, 42, 45 and 30.
Y	5	US 4191503 A, (NEFF et al) See whole document especially col 3 lines 46 - 61 inc. See also figs 2 and 3 items 25 and 25b.

### Categories:

X Document indicating lack of novelty or inventive step	A Document indicating technological background and/or state of the art.
Y Document indicating lack of inventive step if combined with one or more other documents of same category.	P Document published on or after the declared priority date but before the filing date of this invention.
& Member of the same patent family	E Patent document published on or after, but with priority date earlier than, the filing date of this application.

### Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC<sup>v</sup>:



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**Application No:** GB 0309269.9  
**Claims searched:** 1 - 5

**Examiner:** Gareth Jones  
**Date of search:** 29 July 2003

A4L, E2A

Worldwide search of patent documents classified in the following areas of the IPC<sup>7</sup>:

A47C

The following online and other databases have been used in the preparation of this search report:

EPODOC, JAPIO, WPI

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